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THOMAS H. McCOLLIN, Managing Editor.

GIPHANTIA REDIVIVUS.

GIPHANTIA.

OR

A VIEW of

WHAT HAS PASSED,

WHAT IS NOW PASSING,

And, during the PRESENT Century,

WHAT WILL PASS,

IN THE WORLD.

Tranſlated from the original FRENCH,

With explanatory Notes.

LONDON,

Printed for ROBERT HORSFIELD, in *Ludgate-Street*. 1761.

RENEWED attention has lately been called in the leading photographic circles of London to "Giphantia," an exceedingly rare and curious book, originally published in France in 1760, and translated into English by an unknown translator, and published in London in the year 1761, the title of which edition is here reproduced in fac-simile. In this work will be found a singular forecast of photography; it may be said not only of the art in its present state, but possibly of the future.

Ever since the early wet-plate days this matter has every now and then cropped out and attracted the attention of the photographic press, to interest the credulous and puzzle the student, with the result that while many who have never seen the original denounced the whole statement as a fraud on a gullible public, others again, more conservative, but equally emphatic, published papers in the photographic journals giving strong reasons or statements questioning the antiquity of "Giphantia" or the extract in question.

"Giphantia" was again brought into notice at the February meeting of the Camera Club of London, when an extract from the book was read before the Club. The *Photographic News* in reporting the matter, however, was exceedingly cautious in its statements in relation to the matter, on account of the discredit which has on so many occasions been cast on the work,

At the March meeting of the Camera Club a copy of the English translation was produced and shown to the members. This induced the publishers of the *Photographic News* to make a thorough investigation of the subject. It was found that the British Museum Library contains three editions of the book, all, so far as antique appearances go, bearing external evidence of being old and genuine. The first of these, entitled "Giphantia," is in French, and bears the date 1760; it is anonymous, and purports to be published at "Babylon." The second is also in French, and is dated 1761, and purports to be published at La Hague by Daniel Monnier. The third is an English translation, with the title as here reproduced. The anonymous translator dedicates this edition, as was the custom in those days, to some well known female,—in this case an "Hon. Miss Ross." Some members of the London Camera Club hold to the opinion that still another edition was published at Cherbourg, France.

The authorities of the British Museum ascribe in their catalogue the authorship of the book to Tiphaigne de la Roche, and state that the two French editions, which are first mentioned in the preceding paragraph, were in reality published in Paris. Barbier's *Dictionnaire des Ouvrages Anonymes*, Vol. II., pp. 544, published in Paris, 1874, ascribes the authorship of "Giphantia" to Ch. Fr. Tiphaigne de la Roche, and gives the date of the book as 1760, thus fully recognizing its genuineness; and it is probable that on the authority of Barbier's book the name of Tiphaigne de la Roche was applied to the work in the British Museum catalogue of printed books. Vol. III. of the *Bibliotheca Britannica*, published in Edinburgh in 1824, also catalogues "Giphantia," so that the work was certainly in existence before the advent of the daguerreotype, collodion or gelatine processes.

So much for the *Photographic News*. As a matter of fact there can be no doubt whatever of the age or authenticity of the work. "The copy of "Giphantia" in the possession of the writer was brought to America prior to the Revolution, a fact which can be established beyond all peradventure,—certainly many years before Daguerre or Talbot were born. As to the work itself, outside of the part before mentioned, we

have little to say, except that is it is one of those peculiar Utopian or idealistic works so common during the last century, in which the writer visits the visionary spheres which he describes under the guidance of some gentle spirit, shade, mentor or perfect. Giphantia was possibly patterned after "Telemachus" or Dante, without, however, the philosophy of the former or the poetry of the latter.

The author, Charles Tiphaigne de la Roche, was born at Montebourg in 1729, and died on the 12th of August, 1774. He was a doctor of medicine and a literary man, and chiefly made his mark in the world in the latter capacity. He took his degree in the University of Caen. His works are but little known. Most of them are of an idealistic nature, and but few of them are found outside of his native country. He however also published some scientific works; of the latter, his "Physical Observations on Agriculture, Plants and Minerals," published in 1765, is probably the best known. A short time ago 400 francs was asked for a copy of the first edition of "Giphantia."

Regarding the title the author writes that he found himself in a strange land, when his attendant spirit or perfect informs him that

> *"That ſolitude with which thou art ſo charmed, ſtand in the midſt of a tempeſtuous ocean of moving ſands; it is an Iſland ſurrounded with inacceſſible deſerts, which no mortal can paſs without ſupernatural aid. Its name is Giphantia. It was given to the elementary ſpirits the day before the Garden of Eden was allotad to 'parent of Mankind.'"*

The guiding spirit further says:

> *"Of all the countries in the world 'Giphantia' is the only one where nature ſtill preſerves her primitive vigor."*

There are but two copies of this curious work known to be in America, and on account of the great scarcity of this work, and its curious bearing upon the photography of the present date, we reproduce for the benefit of our readers the title-page, together with the two most important pages, in fac-simile, at the same time giving chapter XVII. in full. It will be noticed that the author here virtually foreshadows not alone the dry-plate photography of the present day, but perhaps also that goal for which we all strive, long, and hope;—photography in natural colors.

We now quote in full the remarkable chapter of this book which has often incited much discussion among photographic students.

CHAPTER XVII.

THE STORM.

> *"He conducted me into a hall of a middling ſize, and not much adorned, where I was ſtruck with a ſight that raiſed my*

aſtonishment. I ſaw, out of a window, a ſea which ſeemed to me to be about a quarter of a mile diſtant. The air, full of clouds, transmitted only that pale light which forbodes a ſtorm; the raging ſea ran mountains high, and the ſhore was whitened with the foam of the billows which broke on the beach.

By what miracle (ſaid I to myself) has the air, ſerene a moment ago, been ſo ſuddenly obſcured? By what miracle do I ſee the ocean in the centre of Africa? Upon ſaying theſe words, I haſtily ran to convince my eye of ſo improbable a thing. But in trying to put my head out of the window, I knocked it againſt ſomething that felt like a wall. Stunned with the blow, and still more with ſo many myſteries, I drew back a few paces.

Thy hurry (ſaid the Perfect) occaſions thy miſtake. That window, that vaſt horizon, thoſe thick clouds, that raging ſea, are all but a picture.

From one aſtoniſhment I fell into another: I drew near with freſh haste: my eyes were still deceived, and my hand could hardly convince me that a picture should have cauſed ſuch an illuſion.

The elementary ſpirits (continued the Perfect) are not ſo able painters as naturaliſts; thou ſhalt judge by their way of working. Thou knoweſt that the rays of light, reflected from different bodies, make a picture and paint the bodies upon all poliſhed ſurfaces, on the retina of the eye, for inſtance, on water, on glass. The elementary ſpirits have ſtudied to fix theſe tranſient images: they have composed a moſt ſubtile matter, very viſcous, and propper to harden and dry, by the help of which a picture is made in the twinkle of an eye. They

do over with this matter a piece of canvas, and hold it before the objects they have a mind to paint. The firſt effect of the canvas is that of a mirrour; there are ſeen upon it all the bodies far and near, whoſe image the light can tranſmit. But what the glaſs cannot do, the canvas, by means of the viſcous matter, retains the images. The mirrour ſhows the objects exactly; but keeps none; our canvaſes ſhow them with the ſame exactneſs, and retains them all. This impreſſion of the images is made the firſt inſtant they are received on the canvas, which is immediately carried away into ſome dark place; an hour after, the ſubtile matter dries, and you have a picture ſo much the more valuable, as it cannot be imitated by art nor damaged by time. We take, in their pureſt ſource, in the luminous bodies, the colours which

painters

painters extract from different materials, and which time never fails to alter. The juſtneſs of the deſign, the truth of the expreſſion, the gradation of the ſhades, the ſtronger or weaker ſtrokes, the rules of perſpective, all theſe we leave to nature, who, with a ſure and never-erring hand, draws upon our canvaſes images which deceive the eye and make reaſon to doubt, whether, what are called real objects, are not phantoms which impoſe upon the ſight, the hearing, the feeling and all the ſenſes at once.

The Prefect then entered into ſome phyſical diſcuſſions, firſt, on the nature of the glutinous ſubſtance which intercepted and retained the rays; ſecondly, upon the difficulties of preparing and uſing it; thirdly, upon the ſtruggle between the rays of light and the dried

ſubſtance ; three problems, which I propoſe to the naturaliſts of our days, and leave to their ſagacity.
Meanwhile, I could not take off my eyes from the picture. A ſenſible ſpectator, who from the ſhore beholds a tempeſtuous ſea, ſuch images are equivalent to the things themselves.

Perhaps some of our scientific or literary photographic students can shed some further light upon this interesting subject, and explain by what peculiar power this French savant was permitted to lift the veil of the future, and forecast the process of photography now so universal, which, when Giphantia was written a century and a quarter ago, was thought to be only a chimerical effusion of the vivid imagination of an anonymous writer, without anyone for a moment giving credence to the thought that the utopian statement would one day become an established fact, and that through the researches of two of their own countrymen, viz., Niepce and Daguerre.

Leopard, Pa., April, 1890. JULIUS F. SACHSE.

WANT OF DENSITY IN GELATINE NEGATIVES.

THE subjects of intensifying weak negatives and of reducing over-strong ones occupy an amount of space in our photographic journals that may well excite surprise ; and the question might be asked whether it were a matter of such great difficulty to secure negatives of the proper density by the simple application of the developer.

We were not a little startled a few days ago when an operator of large experience put us the question how to secure density in gelatine negatives Before proceeding to give an answer, we inquired more closely into the matter, and learned that he had had considerable trouble in obtaining good printing density on plates of a first-class make. He also complained of solarization, or over-action in the high lights, if exposure sufficient to render detail in the shadows had been given. We could not inform ourselves with exactitude as to the relative rapidity of the plates, but from what was told to us, the sensitiveness must have been of a high grade.

With the above question to answer, then, we immediately spoke of intensifiers, such as mercury, Schlippe's salt, silver intensification, and other methods, but were met by the assertion that the desirable thing was a means of obtaining sufficient strength without resorting to these after-processes.

This brought about a discussion upon emulsion making, and the changes which take place in plates after leaving the drying-room and during the time that they are stored on the stock-dealer's shelves, or in the photographer's workroom. We at once expressed the opinion that the higher the sensitiveness of the plate, the greater would be the likelihood of having trouble in obtaining density by the first development alone. To confirm this statement, we gave the gentleman referred to the details of some of our experiments in emulsion making, in the course of which we had observed that the plates from a batch of emulsion the sensitiveness of which was not more than about three times that of wet collodion, gave any amount of density desired with a pyrogallic acid developer alone. We also told him of another

batch of emulsion which, through an inadvertence upon our part, had been left exposed too long a time to the action of the heat, and the plates from which were all thin and weak. The image was perfect in these plates, and the sensitiveness far in advance of the previous batch, but the remarkable point was that density was always wanting no matter how the changes were rung on the timing and the development.

Every experimenter with gelatine emulsions and every professional plate-maker has doubtless met with this sort of thing. The commercial turning-out of large numbers of plates nearly uniform in sensitiveness, density, and other photographic good qualities, must rank as one of the triumphs of modern ingenuity and skill. And so far from finding fault with our modern dry plates, we rather congratulate the photographer of the present day that such good plates are obtainable, particularly when we remember how different samples of gelatine vary in character, and the nicety which must be observed in the making of emulsions.

Laying aside for the present the matter of any fault in the emulsion or plates, let us look at those means which are at the disposal of the photographer for the increasing of density. And first, as to the exposure given to the plate. It goes almost without saying that the timing must be suited to the subject and to the light admitted through the lens. Now, supposing that the plate has been overexposed from any cause, the image will appear very quickly when the developer is applied, and the darker portions of the picture, or in other words those representing the shadow portions of the original, will be seen to develop so rapidly that they soon overtake the high lights, and consequently, if the picture is to be saved at all, the plate must be quickly removed from the developer. All chemical action is thus checked; but the image will be weak and thin, because there has not been sufficient time for the developer to act upon the lights and build up the necessary density. Successful development is a process that cannot be hurried; some time being required for the proper development of the various gradations of tone, the high lights appearing first, and being followed by the darker parts. It is in these cases of overexposure that the value of the bromides as restrainers is seen. The action of the solution being slower, the pyro. has time given it to produce the desired opacity. Therefore, if we were about to develop a plate believed to have been overtimed, we should begin with a solution containing a full amount of pyro., a little more than the usual amount of bromide, and rather less than the ordinary amount of alkali. If, in spite of this, the image came too quickly, we should immediately take the plate out and wash it thoroughly under the tap, then lay it in a weak solution of bromide, say five grains to the ounce, and after giving time to let the restrainer get well worked into the film, put it back into the developer and finish. If this still failed, and more plates had to be developed which had received the same excessive timing, we should begin by soaking them in the weak bromide wash, and then transfer them to a developer in which the alkali had been considerably reduced while the quantity of pyro. remained the same or was slightly increased.

Modifying the developer in this manner will at times help things a good deal. But, as we said before, the great point is to give proper timing to the plate. Now this simple piece of advice is sometimes very difficult to act upon, but we may here reiterate what we have so often said in regard to having a large stock of plates *of one make*, and using, if possible, one or two lenses only, with one or two standard

stops that will give the necessary definition. It stands to reason that different subjects present great differences in actinism, and that calculations must be made accordingly. Now if various lenses and various sizes of stops be employed, without especially good reason, the elements of uncertainty become so manifold and so increased that accurately exposed plates can hardly be hoped for.

The practice of making large numbers of instantaneous exposures upon all sorts of subjects, and trusting to the developer to make uniform results, is wonderfully successful on the whole, when we come to consider the facts just mentioned. The exposures given are of course the same for everything, and nothing but experience in development, together with judicious modifying of the solution, will produce approximation to uniformity, even on plates or paper of the same make.

The advice we here give is the best that circumstances enable us to, and it should not be forgotten that different brands of plates do not behave in quite the same manner under the same treatment. We have often thought that the working of photography now-a-days resembles an attempt of a medical man to treat patients with "patent medicines," the composition of which is not known to him. Considering that no photographer makes his own plates, and that not a few use the ready-made developers obtained from the stock-dealers, and that the picture-making is thus done with "unknown quantities," so to speak, it is rather to be wondered at that results are not less uniform in character, and worse in all respects than they really are. We will just add, in concluding, that anyone troubled with a persistent want of density in his negatives which resists the modifications in timing and developing as mentioned, should change his plates and ask for a brand of lower sensitiveness.

ELLERSLIE WALLACE.

COMPOSITE PHOTOGRAPHY AGAIN.

WHEN the claims of composite photography were first announced several years ago, it was confidently hoped by many that the system would really be developed into something of practical value. Apart from some attempts to combine historical portraits, and to identify signatures, however, nothing of importance was really accomplished, and a small amount of fun and ridicule was poked at the idea and its applications, and it has been allowed to drift into obscurity.

Recently, however, interest has been again revived in the subject, and a more critical and intelligent study of the possibilities of composite photography within reasonable limits has induced those who are in the habit of using scientific methods in a scientific manner to revise what may prove to have been a somewhat hasty judgment.

In order to obtain results which are to have any value, the same care as to accuracy and precision must be exercised when using the camera for this purpose, that would be employed, for example, in making an astronomical observation. M. Batut, in his recent experiments, has shown very clearly how composite photography may be tested, and the reliability of the results obtained by its use verified. By constructing a series of geometrical diagrams, twelve in number, each diagram containing a different figure, and all being so drawn that their combination should produce certain definite results, and then making a composite photograph of these diagrams by giving twelve successive exposures on one plate, he was able to secure a combination

diagram of the most instructive character. Certain lines in each diagram were so placed as to form sides of a triangle in the composite photograph, while the other lines were so grouped about these as to form a symmetrical geometrical combination. The lines forming the sides of the triangle each appeared in four of the twelve diagrams, while the other lines appeared only once in each card, so that the sides of the triangular figure each had four impressions upon the one plate, and the other lines gave but one impression each.

The results of these experiments showed that whatever the order of exposure, the single impressions were all of the same intensity, while the lines which had four impressions came out brilliantly.

A variety of exposures gave always the same result, and it was impossible to determine from the appearance of the composite the order of the exposures. The most important point to be observed is the matter of absolute uniformity in timing. M. Batut lays especial emphasis upon the desirability of making the exposures automatically of uniform length, and also upon the desirability of making a composite from a large number of very brief exposures rather than from a few of longer duration if true average results are to be expected.

There are some other points to be considered as well in discussing this subject. The slightest increase in the brilliancy of the illumination of any exposure would undoubtedly cause that image to have a predominating influence in the composite picture, a point which would only be modified but not eliminated by making the composite consist of a very large number of very short exposures. When these conditions are observed, and the proper class of subjects for a composite photograph selected, there is no reason why the method should not have a permanent scientific value.

The question may here be asked: "What is meant by the proper class of subjects?"

The favorite subject for a composite photograph is the human face, and when due precautions are exercised to give each of the single pictures exactly the same share in production of the combination it is undoubtedly *the* class to be studied.

When the result is obtained by copying a number of previously taken portraits it will be evident, however, that if any one of the prints is deeper in tone, or of more actinic color, it will have an undue influence upon the whole combination.

The use of the method for the comparison of a number of signatures presumably made by the same hand, is also a perfectly legitimate and scientific use of the method, and for geometrical figures, and possibly for the comparison of fractured specimens of materials from the testing machine, it may possess important advantages.

As an example both of the unscientific use of the method, and of an unsuitable choice of a subject, a brief anecdote may serve.

A gentleman learning that a friend was about to visit the town of his birth, and being desirous of securing photographs of the surroundings of his early childhood, furnished the traveler with a Kodak, and requested him to make exposures upon the various buildings and interesting places, promising a set of prints for his trouble. The latter quite willingly went through the performance of pulling the string and pressing the button, keeping a careful record of the places, but the development of the film revealed ninety-nine blanks, and one composite (?) of one hundred subjects. It is hardly necessary to say that the home of one's childhood is scarcely a fit subject for composite photographs.

HENRY HARRISON SUPLEE.

A FORTUNATE AMATEUR.

WE see by the foreign papers that our fellow amateur and photographic cousin, Prince Emanuel Philibert Victor Eugene Albert Genova Joseph Marie, Duc des Pouilles et Aosta, has lately inherited from his mother a fortune computed at over $6,000,000, while each of his two brothers only received half that sum. We have been given to understand from seemingly trustworthy sources that this evidence of maternal partiality is entirely due to the Duke's success in the photographic field, our noble amateur surpassing even the most renowned Italian professionals in the portraiture of his august mother, to say nothing of the numerous genre studies, in which the Lares and Penates, so dear to his mother's heart, prominently figured. In addition to his fortune, the duke is a handsome man, with perfectly cut features, tall and muscular in build, and in the event of the death of the weak and delicate Crown Prince, would become the heir to the Italian throne. It is also stated that our photographic cousin contemplates a visit to these shores in the near future, possibly during the coming summer, mainly for the purpose of phographing some of our American scenery. On this occasion he will travel incognito, and be accompanied by two favorite and trusted Soluzione, viz.: the Sviluppatori di Acipi-Rogallico, and Iposolfito di Idrochinon, in place of Signor Feroxolita, who formerly enjoyed the confidence of the Duke, but having lately fallen from popular favor in Italy, as a matter of course will not accompany the ducal party to America. Personally we regret this fact, as we have enjoyed a long acquaintance with the Signor, and we know that his retirement is due to no shortcomings of his own, but is due to foreign interference in Italian development on the part of certain German merchants and bankers in Italy, who have been forcing a favorite of their own into popular notice, one Sig. Metabisulfito di Iconegeno, who, notwithstanding his Italian name, is of Anglo-German parentage. So far, however, without success;—the friends of the old favorite are outspoken in their convictions, and it is even mooted that the newcomer is merely a parvenu, who has succeeded in imposing himself upon the German scientists and others, without having any claim to the exalted rank which is so persistently claimed or him by his followers or dupes.

However, with this discussion we fortunately have nothing to do. We will merely say that when the photographic party arrives on these shores we will extend to them a hearty Yankee welcome, and give them all the aid and assistance in our power. If they will call on us, we are willing to exchange references with him, offer him the use of our dark room, and extend the civilities of the Quaker City to our photographic cousin from the far-off land of Art and Spaghetti. ADOLPHÉ.

ETIQUETTE OF PHOTOGRAPHS.—Niece: "Aunty dear, the young artist, Herr Schmidt, again entreated me at the ball last evening to lend him my photograph, which, he says, will be of inestimable value to him in painting his new picture. He promises to return it as soon as the picture is finished. May I give it to him?" Aunt: "Well, I think it will be all right if you enclose with it a picture of your mother, or some other elderly person; to send your picture alone would be a terrible breach of etiquette."

PHOTOGRAPHING NATURAL COLORS.

OF late the photographic as well as the secular press has been teeming with accounts of the alleged discovery, by one Professor Veress, of photographing and printing natural colors. The article in question being based on an account written by the Vienna correspondent of the London *Standard*, and published in the issue of that journal of April 2d, we reprint an extract giving the most important part of the correspondent's letter, giving the process, viz.:

"The sensitive preparation is a silver chloride emulsion in collodion, or in gelatine, and the solution being prepared in a peculiar way, which is the inventor's secret, it is poured upon either the glass or the paper, where it soon takes a brownish red color. The plate is put into a copying frame and exposed to the rays from a transparent colored drawing, of which the negative picture is soon visible, the dark parts appearing of course in white. The exposure has to last in the case of glass negatives two to three hours, and in the case of paper at least three days, as the colors come out very slowly, but the picture having been fixed in an alkaline bath the colors become brighter and more intense. The process in the camera would require an exposure lasting several weeks, but even the ordinary process will be largely reduced if some experiments on which Herr Veress is at present engaged succeed as well as he hopes, and according to the latest information he has already so changed his original system as greatly to lessen the time of exposure, especially for the paper negatives."

When the matter came to the notice of the editor of the *Deutsch Photographen-Zeitung* he sent a letter to the alleged discoverer, Herr Veress, in Klausenburg, Transylvania, who formerly published the *Fènykèpészéti Lapok*, asking him for further particulars of his discovery. In due time the following reply was received:

"That I have succeeded, after much trouble and sacrifices, in chemically fixing the natural colors is correct. However, until now my colored pictures have only been produced in the copying frame from imitations of stained glass or transparent pictures. Therefore, for an actual impression on a sensitive plate with lens and camera the process is not yet available. To properly utilize this extraordinarily beautiful and interesting process it must be combined with the camera. The possibility of this is at hand, as the dicovered path is sure; the fixation of the colors has succeeded. The whole secret in the way of success is to make the films or coating still more sensitive. But herein lies for me the difficulty, as I am not in a condition to bear any more sacrifices, it is impossible for me, without aid or assistance, to experiment any further. I am now waiting to see what the State may perhaps do for me in this matter. I am exceedingly sorry that I cannot send you any specimens, as all the proofs in my possession I have given to Herr Eugen v. Gothard. He has since given several specimens to Professor Eder, who has mentioned them in a public address. It is seven months since I have been able to do any experimenting, and for the last three months I have had to cease considering myself a photographer, notwithstanding that for almost forty years I have been a devotee to the art, and spent much time and study on it. Now, alas! here I stand with my invention, without being able to carry it out any further. That I have not written to you, dear sir, about the invention is due to my bad penmanship and the difficulty that I have with the German language. Resp., (Signed) FRANZ VERESS."

The *Zeitung* makes no comment, except to state that as soon as any further communications are received they will place them before their readers.

Our readers may draw their own conclusions from the above letter. Veress may have discovered the true principle of fixing the natural colors, so earnestly sought for. Time alone will tell this.

Since writing the above, just on the eve of our going to press, we have received the following communication from our friend Franz Peress, in Kolozsvar. We present it to our readers in full. In addition we have received a number of specimens of his experiments. Lack of time prevents us from giving any extensive description or making comments at the present writing, except to state that the specimens will be shown at the next meeting of the Philadelphia Photographic Society. In the meantime they will be on exhibition at the publication office of the JOURNAL, where they may be examined by svch of our readers as are interested in the subject.

To the Editor of the AMERICAN JOURNAL OF PHOTOGRAPHY, *Philadelphia.*

DEAR SIR:—Please accept my thanks, dear sir, for your kindness as to continue sending your journal to me, although you knew that my journal, the *Fényképészeti Lapok*, had ceased to appear. I assure you, it has been always an enjoyment for me to receive your paper, so excellently edited, and I would truly be very glad if the little sortiment of my photos upon paper and glass in natural colors I send you by the same mail, would prove you how much I esteem the favor you do me. Please, dear sir, to select some of the photos, and deliver it as well as the enclosure to Mr. Carey Lee, his lodging being unknown to me. I shall be very thankful to you, because I want to say him myself, how much I value his arduous labors. He goes quite another way than I do, but if he be ready to unite his experience with mine, I am persuaded we would triumph in a very short time. You see, dear sir, that I succeeded to fix the colors; its for the preparation upon glass, it is in gelatine, upon paper in collodion. The exposusure of the photos upon glass was of 3-5 hours, upon paper 2-3 days. Since I succeeded to make such photos upon smooth plates of thickened [condensed] petroleum in 10-30 minutes.

The plate is put into a copying-frame, and exposed from a transparent colored drawing. My aim is now to lessen the time of exposure as much as to enable me to work with the camera, to photograph moving objects, which I could not do 'till now, because for camera work I wanted 2-3 weeks.

Dear sir, believe me to be very respectfully yours,

Kolozsvar [*Klausenburg*] *Hungary.* FRANCIS DE VERESS.

PHOTOGRAPHY appears to great advantage in connection with some experiments made on the Continent with smokeless powder. To show the difference between a volley fired with the ordinary powder, and the new variety, photographs were taken at the moment the commander gave the order to "fire." In the case of the first-named, a thick, black cloud is represented, through which the gunners are barely perceptible, while, in the second case, only a thin haze is noticeable. The *Archiv* in No. 644, reproduces two of the photographs, of which we will have more to say in our next number.

EXPERIMENTS OF PRACTICAL PHOTOGRAPHERS.—II.

Translated from the "*Photographisches Archiv*" expressly for the AMERICAN JOURNAL OF PHOTOGRAPHY.

C. BAUMANN, Hofphotograph Dortmund.

Developer.—Eikonogen.

Advantages.—Cleanliness and clearness of plates, wealth of fine tones, combined with strong high lights, when extra rapid plates are used.

Composition.—The usual formula.

A.

Sulphite soda	200 g.
Water	3 liters.
Eikonogen (dissolved warm)	50 g.

B.

Cryst. soda	150 g.
Water	1 liter.

For use, 3 parts A., 1 part B.

In the fixing bath no sulphite of soda is used, as it is superfluous, and in my experience the plates are destroyed by leaving them in a bath of that kind any length of time.

Vorbad.—None.

J. H. BRASCHOSS, Cöln.

Developer.—Eikonogen.

Advantages.—Saving thereby half of the exposure. Solution can be used repeatedly, is lower in price than all others, and is absolutely non-poisonous.

Composition:

I.

Eikonogen	50 g.
Sulphite soda	200 g.
Water	3000 g.

II.

Soda	300 g.
Water	2000 g.

Vorbad.—None.

JULIUS DÖRSTLING, Hofphotogr., Eisenberg i. A.

Developer.—Until within three months ferrous-oxalate, since then with preference eikonogen.

Advantages.—Shorter exposures, detail in shadows and high lights, and transparency at the same time. Strong negatives, therefore more rapid printers; greater permanency.

Composition.—Dissolve 200 g. sulphite soda in 2½ litre rainwater, then rub up 50 g. eikonogen in a mortar, and pour into an earthen pot in which there is half a liter of hot water. After both are dissolved pour the hot solution into the 2½ liters of soda, then shake up well.

No. 2.—Dissolve 150 g. soda cyst. in one litre of water. Three parts No. 1, one part 2.

Vorbad.—None.

OTTO FALTZ, in Eberswalde,

Developer.—Eikonogen.

Advantages.—Quick and active action. The picture develops brilliant and complete detail in the deepest shadows. The developer can be used repeatedly.

Composition:

Water	600 g.
Sulphite soda	100 g.
Potash, C.P	40 g.
Eikonogen	20 g.

Dissolve and boil in a Florence flask; use when cold.

Vorbad—None.

W. GILLES, Unna.

Developer.—Eikonogen, since six months ago, with good results.

Advantages.—Detail in the shadows; much quicker printing negatives than oxalate; shorter exposure; shading of certain portions of the negative in printing lessened.

Composition:

I.

Distilled water	1500 g.
Sulphite soda	100 g.
Eikonogen	25 g.

II.

Distilled water	1000 g.
Ordinary soda	150 g.

For use, three parts No. 1, one part No. 2. Both solutions keep; No. 1 made in December was without change in February.

Vorbad.—None.

F. HUNDT, suc. to Hülswidt-Münster i. W.

Developer.—Eikonogen.

Advantages.—The enormous reduction property of the agent, with a finer silver grain that in our experience is attainable with any other developer. We use extra rapid plates exclusively, which with pyro. and oxalate give a very coarse grain. With eikonogen, however, the grain is so fine as not to be perceptible. Shorter exposures than with any other developer; cleanliness.

Composition:

I.

Sulphite soda	200
Water	3000
Eikonogen	50

II.

Carb. soda	150
Water	1000

For use, three parts 1 and one part 2, bromide 1-2 drop 1:10. When the high lights stand out strong pour off the developer and finish with fresh (without bromide.) In this manner we obtain exceedingly brilliant harmonious negatives.

Vorbad.—None.

THEODORE SCHAFGANS, Jr. Bonn.

Developer.—Until a few months ago, oxalate; now I have adopted eikonogen, and use it exclusively.

Advantages.—With eikonogen the film remains wonderfully clean and clear, the plate shows greater plastik, and beautiful high lights. With dexterous use of old developer over-exposed plates may be brought to the proper density, and per contra, greatly under-exposed plates may be saved by use of the strong developer.

Composition.—With normal and properly exposed plates I use the developer exactly according to the formulæ of Dr. Krugener. With doubtful exposures I commence with old developer, and, according to circumstances, finish with fresh developer.

The development must only be done by a weak red light, or the plates are apt to fog and the fine lights disappear.

I have also found that the two solutions must be kept separate until just before use. Also that if two solutions are mixed in large quantities the developer loses its power after two days.

Vorbad.—My experiments prove that they do not hasten development.

E. LASSEN, Ratzeburg.

Developer.—Eikonogen.

Advantages.—Since six months ago I work with eikonogen, and am well satisfied. We obtain brilliant negatives, high lights, middle-tones, and clearness of shadows, with rich detail. Time of exposure is shortened one-third in relation to oxalate, also cheapness.

Composition:

A.

Distilled water, boiled	600 g.
Sulphite soda	100 g.
Potash	40 g.
Eikonogen	20 g.

When the water boils, dissolve first sulphite, then potash, and lastly eikonogen.

Vorbad.—None.

C. WESTENDARP, Cöln.

Developer.—Eikonogen.

Advantages.—Surety, simplicity, cheapness.

Composition.—I use the formula of the manufacturer. When developing, however, I take half old developer; the plates remain clearer, and any desired grade o strength can be obtained thereby.

Vorbad.—None.

WM. BERGMANN, Moers.

Developer.—Ferrous oxalate.

Advantages.—Surety, simplicity, cheapness.

Composition:

A.

Iron	1 : 3

B.

Oxalate potash	1 : 3

One part A, three parts B.

Vorbad.—With extremely short exposures, hyposulphite soda 1 : 2000.

AUG. CLASSENS, Aachen.

Developer.—Oxalate.

Advantages.—The constancy.

Composition.—In summer, 1:5 ; exposure 1:1½ seconds. Winter, 1-5; exposure 2-3 seconds.

Vorbad.—With drop shutter exposures of 1/6-¼ seconds, a few drops dilute hypo in developer.

F. COURTE, Püttlingen.

Developer.—Iron oxalate.

Advantages.—Simplicity and constant properties of development. Adaptable to all kinds of exposure. Cheapness.

Composition.—Saturated solution of oxalate of potash.

A.

Iron	30 g.
Water	100 ccm.

A few drops 2 per cent. solution tartaric acid.

B.

Old developer with a few drops of above tartaric acid solution added.

For use in normal exposures:

Iron (A)	1 part.
Old developer (B)	1 part.
Saturated solution oxalate	2 parts.

For over-exposed plates:

Iron (A)	1 part.
Old developer (B)	2 parts.

For very short exposures:

Iron	1 part.
Oxalate	3 parts.

Vorbad.—None.

JOH. FREUND, Schlüchtron.

Developer.—Oxalate of Potash and Iron.

Advantages.—Simple manipulation and sure results.

Composition:

A.

Oxalate potash	30 parts.
Distilled water	100 parts.

B.

Iron vitriol	30 parts.
Distilled water	90 parts.

Just before use: 3 parts A and 1 part B, with a few drops bromide potassium, 1-10.

Vorbad.—None.

H. HABERLANDT, Berlin.

Developer.—After all developers have been tried, I have left all, even Eikonogen, and return to iron developer.

Advantages.—Iron acts quicker than Eikonogen. I would prefer pyro on account of its finer detail if I only had portrait plates to develope; further, iron and pyro—unless through carelessness—never fog, while Eikonogen easily does. This, however, may be the fault of the unequal quality of even the best sulphite.

Composition:

I.

Oxalate potash	300
Water	1000

II.

Iron	300
Water	1000

One part iron to three parts oxalate.

I make both solutions with hot water, and filter. In No. II., I pour two drops concentrated sulphuric acid to every 100 g. hot water, then dissolve the iron and filter.

Vorbad.—One part hypo to 8000 to 10,000 parts water, only with drop-shutter exposures.

LOUIS HERMESTROFF, Metz.

Developer.—Iron Oxalate

Composition:

Potash	1-3½.
Iron	1-3.

Three parts potash and one part iron, both dissolved in hot water.

Vorbad.—With drop-shutter exposures, hypo 1-1000.

J. F. KLINGER, Braunau ob. Oesterreich.

Developer.—Iron Oxalate

Advantages.—The always even results with Monkhoven dry plates, with fine modulation, close grain, and high lights.

Composition:

A.

Neutral oxal. potash	300 g.
Distilled water	1000 g.

B.

Iron vitriol	300 g.
Distilled water	1000 g.

Three to four drops sulphuric acid.

For use, 4 parts potash, 1 part iron. Reduction if necessary.

Hypo	200 g.
Water	1000 g.
Red Pruss.	1-5.

Vorbad.—Children with advantage:

Water	3000 g.
Hypo	1 g.
Citric acid	3 g.

A. ZUR MÜHLEN, Magdeburg.

Developer.—Oxalate.

Advantages.—With Vorbad, soft and clear shadows.

Composition.—Oxalate 1-4, Iron 1-3, For use, 1 part iron, 3 parts oxalate.

Vorbad.—Hypo.

ALFR. PERSON, Lahr.

Developer.—Oxalate.

Advantages.—Clear plates. Grey color and rapid printers.

Composition:

I.

Oxalate	300 g.
Water	1000 g.

II.

Iron	100 g.
Water	3000 g.

For use I. three parts, II. one part. Consider the developer the best. Have developed shortest drop-shutter exposures with success.

Vorbad.—None.

PROF. C. C. SCHIRM, Berlin.

Developer.—Ferrous oxalate, with vorbad (250 water, 1 part hypo), and an addition of weak solution of hypo and bromide to developer.

Advantages.—Evenness in appearance of lights and shadows, and the correct relation to each other, gradation and beauty in detail.

Composition.—

A.

Oxalate of potash	1
Water	3

B.

Iron vitrol	1
Water	4

One part B to three parts A with the addition of one drop of solution.

Hypo	0, 5.
Bromide	3g.
Water	100g.

to every 10 c.cm. developer. Also two-thirds old developer to one-third fresh.

Vorbad.—One hypo to 2500 water.

L. SCHMIDT, Frieberg.

Developer.—Iron Oxalate.

Advantages.—Works not too slow, gives clear shadows with all detail and high lights, when suitable dry plates are used.

Composition:

A.

Oxalate potash, neutral	300 g.
Distilled water	1000g.

B.

Sulph. Iron	100 g.
Distilled water	300 g.

Sulph. acid, c. p. two to three drops immediately before use, three parts A to one B, with underexposed plates, to every 100 g. developer one to two drops hypo 1:100. Over exposure I regulate the development with the addition of bromide 1.10, drop by drop.

Vorbad.—None.

[Note.—Have tried Eikonogen in various ways, but prefer Iron Oxalate to all others. I however think the time will come before long that with different combinations the Eikonogen developer will become the best that now exists.

L. STUTING, Hofphotograph, Barmen.

Developer.—Oxalate of potash with iron.

Advantages.—I have found that it works clearer and stronger than all others.

Composition.—Saturated solutions oxalate and iron, 3 parts of ammonia to 1 part of iron.

Vorbad.—With drop shutter and interiors 1 part hypo, 2000 water, to which add a few drops of 10 per cent. bi-chloride mercury.

GEORGE MULLER, Eltville.

Developer.—During the last six a prepared hydrochinone developer, which has kept well and remains clear. I use it fresh for instantaneous, and old for time exposures.

Advantages.—Softness combined with fine lights and especially fine detail in shadows—good coloring of negatives.

Composition:

A.

Water	400 g.
Sulphite soda	45 g.

B.

Water	450 g.
Soda	45 g.
Potash	45 g.
Sulphite soda	45 g.

For a plate 13 x 18 cm. take A, 40; B, 5; 10 drops bromide. After these are in the developing glass add just before use a small thimble full of dry pyro.

Vorbad.—None.

HUBERT KOCH, Kevelaer.

Developer.—Pyrogallic acid.

Advantages.—It gives strong negatives with soft modulation, develops strong and quick. Negatives are easy printers on account of the bluish color of plates, with extreme cleanliness. Excellent results can be obtained.

Composition:

A.

Water	500 g.
Sulphite soda	100 g.
10 drops sulphuric acid.	

B.

Soda	50 g.
Water	500 g.

Before use—4 parts water, 3 parts A to 3 parts B. (Note—pyro not given.—*Trans.*)

Sulphite of soda added to fixing bath.

Vorbad.—None.

These replies will suffice to show the general trend of the German portrait artists. We find that the publishers of the *Photographisches Archiv* sent out a total of one hundred and forty-five queries throughout Germany and Austria-Hungary. Eighty replies were received, forty-eight of which have been reproduced in these columns for the benefit of our readers—both professional and amateur. From the great stretch of territory covered by these responses they may be accepted as fair representatives of the whole body of photographers who are scattered throughout the Fatherland. The result arrived at shows that ferrous oxalate is still the most generally used agent in the development—more than one-half (44-80ths) still adhere to the old stand-by; twenty-five per cent. (20-80ths) have become converts to the latest candidate for photographic favor, viz.: eikonogen. Next comes hydrochinon or fifteen per cent. (12-80th), and finally pyro (8-80th), or 10 per cent. of the whole number of replies received.

In analyzing the total replies we find that in the advantages claimed for the ferrous oxalate seventeen claim simplicity and surety, nine claim equality of work, nine claim capabilities of modulation, seven claim clearness of negatives, seven claim rapidity of development, seven claim cheapness of price, three claim cleanliness, two claim greater latitude of exposure, two claim value of copying properties.

Of those in favor of eikonogen: thirteen claim that the new developer is superior to all others in producing soft and clear, yet at the same time strong negatives, ten claim that the time of exposure is much shortened, eight claim greater detail in the shadows, seven claim rapidity of work, seven claim brilliant middle tones and high lights, four claim advantages of repeated use, two claim negatives that are easy printers and cleanliness in development.

Hydrochinon: five claim keeping qualities of developer, three claim soft and strong negatives and convenient for application, three claim surety of work, two claim fine modulations.

Pyrogallic acid: four claim superior brilliancy and detail in negative, with good color for printing, further, great latitude of exposure, that it keeps well in separate solutions and acts quickly. The developer, however, requires great cleanliness in all manipulations.

As to the vorbad, it is apparent that with the use of eikonogen and pyro it is unnecessary, with hydrechinon only occasionally, while with ferrous oxalate it is requisite in half the normal cases, while it is always required with drop shutter exposures on in cloudy weather, the usual formula is hypo in a very dilute solution 1 to 1000 to 10,000, and occasionally with the addition of a few drops of solution bichloride mercury.

The editor of the *Archiv* closes the subject with the statement that although they make no pretension to completeness, they are yet convinced that the imparted information of practical experience will prove of great service to the craft in general, giving many valuable hints and points to the professional as well as the intelligent amateur.

JULIUS F. SACHSE.

THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

A STATED MEETING was held Wednesday evening, May 7th, 1890, the President, Mr. John G. Bullock, in the chair.

The Secretary reported the receipt of an invitation from the New York Camera Club to an Exhibition of the Work of Members, April 14th to 19th; also, the 81st, 82d, and 83d Annual Reports of the Pennsylvania Academy of the Fine Arts, and from the Liverpool Amateur Photographic Association a prospectus of an International Photographic Exhibition to be held March 6th to April 4th, 1891.

The Lantern Slide Committee reported that the slides showed at the April Conversational Meeting were those of the New Orleans Camera Club; slides also being shown by Dr. C. L. Mitchell and Messrs. Carbutt, Dillon, Stirling, Cheyney, and Rosengarten. A communication was also read from the American Lantern Slide Interchange, announcing that the Directors had elected Mr. George Bullock, of Cincinnati, Manager, and William H. Rau, of Philadelphia, and F. C. Beach, of New York, Assistant Managers for the season of 1890 and 1891.

The Committee appointed to prepare a Memorial of the late President of the Society, Mr. Frederick Graff, reported the following:

Perhaps one of the greatest sources of consolation to those who are called upon to mourn the loss of a friend and leader is the review of his past life as connected with themselves and the interests over which he presided, particularly when those recollections fill us with love, admiration, and respect for the character of our lost friend; we think this will be found preëminently the case in regard to our late lamented President Frederic Graff. We have been accustomed to see him in our midst for so long a time, presiding over our councils, encouraging us by his example and advice, exciting our zeal in the race by his own untiring interest in our work, and his great desire that our noble art should be more than a casual amusement for the passing hour. His own love for it was genuine:—amongst the very first to take it up as an amateur, and to apply to it all the energy and resources of his well trained mind, his interest never flagged, nor did his enthusiasm diminish during his life. We find his name attached to the call for the preliminary meeting, October 19th, 1862, to discuss the feasibility of forming a Photographic Society. At this meeting he was appointed chairman, thus actually presiding over the very birth of the Society. Those of us (now few indeed) who were present at that meeting cannot fail to recall the earnest words in which he urged the necessity of organized action amongst those interested in photography. We were then a scattered few, groping in Cimmerian darkness that few of those who now enjoy the full glare of the photographic noonday can realize, each one experimenting for himself, wasting much precious time in arriving at results that some one else had forestalled him in, whilst he himself was able to supply information as much needed by others. Photographic literature was very limited and inaccessible, and many of the materials used had to be prepared by the operator himself if he desired any certainty in their results; thus it was that we felt the great need of co-operation and opportunity for the interchange of ideas. At the first regular meeting of the Society, held November, 1862, he was elected Vice-President, which position he occupied until the year 1868, when he was elected President, and continued so until 1870, when his duties as head of the Water De-

partment of the city compelled him for a time to retire from official connection with the Society, but he was always present at its meetings, and his interest in its welfare never ceased. His work as Chairman of the Photographic Department of the Sanitary Fair, held in the year 1864, for the aid of our suffering wounded soldiers, showed how eareest was his desire to succor those who were suffering in their country's cause, and the large returns made by his department are the best proofs of his wise and energetic administration. Again, in 1886, we find him at our head, and he retained the office of President of our Society until his death. On the occasion of his assuming the chair at his election in 1886, after reviewing the advance made in photography during the last twenty-three years (the Society at that time being so long in existence), he used the following words, showing how fully he believed in the future advance of the art: "And yet we look for more,—what shall it be? Who can tell what is to be the future of our favorite hobby,—how far will the next twenty-three years of this Society see us in advance? We now make pictures upon a paper supported film, and develop them into beautiful negatives; may we not hope to have the finished positive impressed in the camera without further development, even then in colors." These words, taken in connection with the recent discoveries made both in this country and in Europe, seem almost prophetic. The Society having now largely increased in numbers, and from the few who assembled for mutual counsel and advice, where formal rules and regulations were not needed, he at once began to urge the importance of a broader and more useful existence, commensurate with the position we should hold in the photographic world. He solicited the members to prepare papers to be read at the meetings of the Society and afterwards discussed. He was always first to draw its attention to any advance in the art, and to his energy and foresight we are in a great measure indebted for our flourishing condition and the position we occupy. The social side of his character was not less remarkable. He was always ready to assist with his advice and counsel those standing in need, and his reassuring words have cheered many a fainting heart. Well does one of your committee remember when, after a series of the most disheartening failures, he had almost resolved to abandon his work as a useless waste of time and money, when the words of advice and encouragement he received from him urged him to renewed and more successful efforts. We can all recall the genial influence of his character which seemed to pervade all our informal gatherings and excursions, always ready to contribute his share to render the occasion a success, and by his example making us indeed a united band; and that the spirit which animated him may always be present in the future; and that his example and precepts may excite us to renewed action, is the fervent wish of your committee.

(Signed.) JOHN C. BROWNE,
F. T. FASSITT,
GEORGE VAUX, JR.

On motion it was directed that the Memorial be spread upon the minutes of the Society, and a suitably prepared copy be presented to family of the late President.

The Committee on Membership reported the election of Mr. Edward Pennock as an active member.

Mr. Joseph H. Burroughs, for the Committee of Ten appointed to consider the advisability of securing more convenient quarters, and the establishment of a working

department for the Society, reported that several meetings had been held, but the Committee was not quite ready to make a report. He moved that in view of the importance of the subject, and to avoid taking up the time of a regular meeting with a prolonged discussion, that when this meeting adjourn it be to meet on Wednesday evening, May 14th, to hear and discuss the report of the Committee. Carried.

Mr. Frederick E. Ives sent to the meeting a package of photomicrographs of most beautiful quality, being among the first work of this character he had done. In a note accompanying the prints be stated that they were made with comparatively low-priced objectives, which were not intended for photographic work, and not selected with a view to such use. Some of the plates used were Carbutt "Orthochromatic," others, Seed plates treated with erythrosine, and all exposed through yellow color-screens. A small pencil of light was used for amplifications up to 40 times, a bull's-eye condenser for medium powers, and condenser of 70 degrees for high powers.

Mr. Cheney, referring to the matter of incrustations on cover glasses of lantern-slides, stated that having had occasion to re-mount two old silver prints which had been framed for many years, he found the same incrustation on the glass which had covered the pictures. In this case the cause could not be looked for in any chemicals emanating from the plate. He attributed the incrustation in some way to acetic acid.

Mr. Stirling read a passage from a letter received from Mr. Pancoast, who had been investigating the subject very carefully. He had recently received a letter from Mr. York, the celebrated English slide-maker, stating that the incrustation was due to the use of French or German glass, which contains an excess of alkali which is acted upon by moisture. With English flatted crown glass the trouble could not occur.

Mr. Coates, who had a large collection of slides made by Mr. York, stated that he had never found the defect on any of these slides.

Mr. Fellows stated that he had experienced the trouble with English flatted crown, as well as with the French glass.

Mr. Sartain had frequently seen the deposit on the inner side of the cover glass of daguerreotypes. In this case it was thought that the chemicals used in forming the picture caused the deposit on the glass.

Mr. Stirling, referring to the recent Photographic Exhibition, at Newcastle-on-Tyne, England, thought the Society had reason to congratulate itself very much on the achievements of three of its members, no less than four medals having been won by them.

Mr. Pancoast won a silver medal for architectural subjects, Mr. Bullock a bronze medal for landscape work, and Mr. Redfield a silver medal for figure subjects, and also one for lantern slides.

The best English professional and amateur workers met on equal ground in these competitions, making the result all the more gratifying.

Mr. Francis Burrows showed a French hand camera, in the form of a pistol. It contained a roll of Kodak films, making a square picture the full width of the film. The exposure was made by pulling a trigger, as with an ordinary pistol. The gentleman who brought it over from France had made about one hundred exposures, but owing to some fault in in the shutter, which was rather heavy, it had not quite produced a sharp negative, the shutter invariably jarring the camera at the instant of exposure. A register showed the number of exposures made, and two short legs

could be turned down in front, forming with the pistol butt a tripod stand for use with time exposures,

Mr. Earle showed a very beautiful camera made by R. & J. Beck, the mountings of which, as well as the lens, were of aluminium. The reduction in weight, as compared with brass as usually used, was about one-half. A rack and pinion movement operated the back portion of the camera in focussing,—a valuable feature, enabling a short focus lens to be used as readily as one of long focus. The front board could be extended by hand to any desired point.

Mr. Walmsley showed a neat and compact camera he had devised for microscopic work. The box was but about four inches square, mounted on an adjustable rim stand, with bellows for attaching to microscope in any position. Anthonys Lilliput plate-holders were used, carrying either plates or films. He had used powers ranging one and one-half to one-fifteenth with equally good results.

Mr. Redfield showed a tripod stand made by Ashford, of Birmingham, England. It was made of teak wood, and so constructed as to be very strong and rigid, and at the same time quite light. The lower leg, by a convenient arrrangement, could be drawn up between two of the four upper pieces entirely to the top, shortening the legs one-half, and making the adjustment for uneven ground or to various heights very convenient.

Mr. Hanawelt showed an exposing-shutter of his own invention, in which the slide moved horizontally in front of the line. The opening being narrower at top than at bottom, gave one-half the sky as compared with the foreground. By an ingenious mechanism, a sort of crank motion operated the slide, avoiding any jar at opening and closing, and regulating the movement of the slide so that its speed was slowest at the instant of full opening, and quickest at the beginning and close of its action.

Adjourned. ROBERT S. REDFIELD, Secretary.

NOTES ON OPTICAL LANTERNS BEFORE PHILADELPHIA PHOTOGRAPHIC SOCIETY.

The subject announced for discussion was "Optical Lanterns and Methods of Illumination in Connection Therewith," which was introduced by Mr. Stirling, with the following remarks:

"I make a personal statement at the start, which is to the effect that I am going to talk on something I know very little about. The idea is simply to speak of lanterns very briefly, and tell you what we have here, and, if the members desire, to show one or two of the lanterns. Like a good many other scientific apparatus, the lantern was originally very little more than a toy. It is very "antique," and there has been but little change in the general principles of the lantern that we have now. There are various references in books dating in the middle ages, in the 15th, 16th, and 17th centuries, to indicate that the magic lantern was used—that the principle was known. There are some remote references in ancient writings on the black art, which have been thought to refer to the magic lantern. But it is known almost positively that it dates from somewhere about the middle of the 17th century.

"The light we use now is practically the Drummond light, which was invented by Lieutenant Drummond, a royal engineer, about 1826. A Philadelphia scientist

had previously discovered that the mixture of hydrogen and oxygen gases in the blow-pipe produced the most intense artificial heat hitherto known. I think the temperature of an oxy-hydrogen flame is estimated to be 4,000 degrees Fahrenheit. The illumination that was used in early lanterns was very imperfect. The illustrations show single wick lamps, and even candles. I believe the first scientific apparatus for the burning of mineral oil was produced here in Philadelphia by Mr. Marcy. He called it the sciopticon. As far as I know, there has been very little change in that instrument, but of course it has been improved. The lamp is a two-wick burner, and the flame-chamber is part of the body of the lamp. There are innumerable styles of oil lanterns, with two wicks, and set, as in that one (pointing), edge on the condenser. There is a lantern here with two wicks set at an angle. There are two-, three-, four-, and five-wick lamps; and here is a new lamp, in which there are two concentric wicks. The relative virtues of these different forms of oil lamps is an open question which, possibly, is a suitable one for the members to discuss themselves.

"There are several different methods of using the oxy-hydrogen light. The jet that is now generally used is what is called the mixed jet. The gases are mixed just before they are ignited, and Lieutenant Drummond found that the burning of these gases through a blow-pipe upon a surface of lime produced a light which is equivalent to 430 candle-power. Other substances than lime have been sought for, but none have been so satisfactory.

"Here is a primitive form of the mixed jet. The two gases are supplied to a little chamber by separate openings. They are mixed there and then pass up to the nozzle of the jet. A very simple form of it is the one in this lamp, which is the invention of Mr. Ives, a member of this society, and which is a model of compactness.

"The danger of using a mixed jet results from the fact that these two gases when mixed become highly explosive, and if for some reason or other the pressure in the cylinders happens to be unequal, a mixture of the large volumes in the cylinders is liable to occur, and a terrific explosion is the consequence, with sometimes fatal results. In order to avoid danger, what is called the safety jet was invented, the principle of which consists in the mixture of the gases at the moment of ignition. Still another form is called the oxycalcium jet, in which the flame of the spirit lamp takes the place of the hydrogen, the oxygen being blown through the flame under pressure. A practical difficulty in lantern operation is the preservation of the limes. When not in use they are apt to become air-slaked, and when in service they become disintegrated by the action of the intense heat. This disintegrating action proceeds rapidly while the jet is burning, causing a pit in the lime. This reduces the strength of the lime, besides forming a source of danger to the condenser, which is liable to be broken by deflected rays of heat. Therefore various mechanical contrivances have been used to turn and raise the lime, so that a fresh surface can be readily presented at the orifice of the jet. Some of these move by clock-work and some by hand. Specimens of both systems are upon the table." Mr. Stirling went on to explain the principle of the Ives' saturator, and other appliances intended to obviate the necessity of providing a hydrogen cylinder or source of supply.

Mr. Vaux asked if any arrangement had been made to prevent back pressure of the gases. Mr. Stirling replied that such valves were in successful use.

MAKROSCOPIC PHOTOGRAPHY.

SEVERAL articles have lately appeared in the English journals on the application of photography to the medical science. In these papers its utility was pointed out, and a great future prophesied for it. *Photography* (London) has especially taken up the subject, and two able papers have already been published in that journal. In the first paper the subject of Medical Photography was treated in a general way. In the second, the Makroscopic branch was treated, leaving the microscopic branch for a subsequent article. We reproduce a copious extract from the second paper, which cannot but interest our scientific readers. Our British contemporary states:

Under the head of makroscopic photography falls such work as photographing living patients in hospital wards, in rooms specially adapted for the work in hospitals, in the consulting room; photographing the cadaver before or during *post-mortem* examination; photographing morbid tissues after removal from the patient, or from the cadaver, these tissues not being prepared for the microscope.

Regarding apparatus for use in the ward, in the consulting, or *p. m.* room, or in an apartment set apart for such work—we have seen too often the ordinary tourist's landscape camera used for such work, and the ordinary tripod. Of course, these appliances will work all right, but we would suggest studio apparatus. A half-plate camera with "repeating back" is our idea of the suitable, and a studio stand on good casters, preferably covered with rubber or cloth to prevent noise. The stand must be adaptable to a considerable height, and must go very low; we may have to deal with a child on a chair, or with patients on the usually low hospital beds. As a rule we notice that the window-sills in wards are rather high, and so the lower part of ward is but dimly lighted; a bed near a low-silled window is generally very badly lighted. The stand should give the lens a range from, say 2 feet 6 inches to 5 feet 8 inches, and should be steady at all heights.

The repeating back of the camera we consider of great importance, and we speak from experience. The exposure in a ward, and in different parts of the ward, sometimes at one end, sometimes near a window, sometimes far from one, is never by any means an element of certainty, and we always recommend duplicate negatives with varied exposure. With a repeating back no re-focussing is required, while if the operator desires a different view, he has every facility for getting it, and so he has two aspects in one plate, which is found very convenient.

The lens used should be of the portrait type, or at least should work at *f* 4, or as near to that as possible. The focal length may be from six to eight inches. We see no useful end to be attained by making the negatives larger than quarter-plate or half of a half-plate, and as the best method of finally utilizing the illustrations is by means of lantern slides, the quarter-plate answers well, and the half-plate repeating-back camera, with, say, a 7-in. lens, will suit our purpose.

No doubt success would be more certainly achieved if the patients could be conveyed for photographic purposes to an apartment suitably lighted; but in many cases the patient cannot be conveyed away from his bed, and in such cases we recommend the use of a flash light. Many private consulting rooms—we may say most—are not remarkable for brilliant lighting, and here, too, the flash will come in handy. *Post-mortem* rooms, so far as we have seen, are nearly always badly lighted,

and operating theatres are often lighted only from above. In all such cases, and in other cases besides these, the flash light will be of the greatest service.

We would recommend the use of pure magnesium powder and a flashing arrangement that projects the powder upwards rather than horizontally. We have two reasons for preferring the upward impulse. There is no danger of blowing powder, flame, or smoke into or towards the patient's body, and the smoke can be more easily caught after the upward flash than after the other. A difficulty may suggest itself to our reader in the matter of the smoke that arises from flash lights as generally produced, but Dr. Patterson suggested to the writer a very good way of getting rid of the smoke. An assistant holds an ample cone of brown paper over the flash lamp, the smoke rises into the cone, and if the open end of the cone be at once closed by a flat piece of wood, the cone and the smoke can be removed from the ward—bodily, as one may say. Mr. Victor Corbould informs us that the smoke arising from his flash light is not a nuisance in the ward, the quantity not being sufficient to inconvenience anyone.

We would also urge the advantages of using color-correct plates in the class of work with which we are dealing. In ordinary cases no yellow screen will be required, but when special appearances are important, and when the ward is very full of clear light, and probably always with the magnesium light, the screen will be found a great help. The commercial plates can be used, or plates treated with ammoniacal erythrosin, solution while in many cases where dissections are our subject, it will be found necessary, if we wish the best results, to use cyanin-treated plates. We propose, when time permits, to make some experiments in correcting plates for color in such a way as to make them most suitable for work on dissections. We need hardly point out to those who have seen dissections or *post-mortem* examinations that the surfaces usually presented are about as unpromising subjects for photography as could well be found, but the experience we have had, slight as it is, gives us a lively hope that by suitable treatment of plates we may be able to produce results in this line far more easily and with far higher qualities than we can achieve by either plain plates or plates with sensitiveness relatively enhanced to the yellow region of the spectrum.

THE NIGHT-BLOOMING CEREUS.—Our esteemed contemporary, the *Photographic Times*, of April 25th, 1890, treats its readers to an excellent illustration—a photogravure of a flower subject. In composition and execution this is almost above criticism, and well illustrates the possibilities of Blitz-Pulver or Flash-Light photography. At the same time we cannot help calling the attention of our photographic brother of the *Times* to the fact that the superscription is misleading,—the plant flower here shown is not a "night-blooming Cereus," but merely a more or less common species of the Cactus family, of the subdivision Ephiphyllum or Phyllocactus, —if a night-bloomer, the *P. latifrons*. The Cereus is of an entirely different habit and appearance. The AMERICAN JOURNALOF PHOTOGRAPHY is the only photographic magazine that has ever published a picture of the night-blooming Cereus,—giving a series of plates showing the evolution of the grand monarch of the floral kingdom. We allude to our article in the JOURNAL for September, 1888,—"The Evolution of the Cereus." We expect in the near future to present to our readers some further matter on this subject.

MORE AMATEUR PHOTOGRAPHY IN SOUTH JERSEY.

THE amateur photographers of Bridgeton, New Jersey, have lately formed a Society consisting of about twenty-five members, and have fitted up handsome rooms in the centre of the city. These rooms are arranged as shown in the accompanying diagram. Their large reception room or parlor is forty by twenty, with high ceiling, with both northern and eastern lights, and is provided with a library, reading tables, various games, such as checkers, chess, etc. On the walls are a number of exhibits of the work of the various members. At the south of the main room is a hallway and a printing-room about six by seventeen, with southern light, provided with individual cupboards, wash-sinks, soaking-boxes, etc. There is an outer or dry dark-room, with outside red light and red gas lantern, and an arrangement for printing bromide enlargements. This also forms a safety-hall between the printing-room and the main dark-room. The main dark-room is about six by seventeen feet, fitted up with sinks, provided with sliding trays, drying racks, and individual cupboards for chemicals, etc., for each member. It is well ventilated, and so arranged with pure fresh air from outside, which constantly passes through it. The dark-room is lighted by several ruby and orange panes of glass with gas burners and reflectors outside, the light being controlled by keys from the inside. It is provided with an abundant supply of clear, cold spring water. The printing-room faces toward the south, and has two large windows, with printing-racks, etc.

Considerable interest is taken in photography in Bridgeton, and there are many little lakes, raceways, and fine views among the pine woods and on the river, which are highly appreciated by visiting amateurs. The name of the club is the "Camera and Wheel Society of Bridgeton." They will be very glad to welcome at any time amateurs from other cities who may visit South Jersey, and extend the use of their rooms at any time they may call.

The President of the Society is H. A. Janvier; Vice-President, F. F. Smith; Secretary, H. L. Reeves; Treasurer, George B. Hampton. They have also a board of three managers. Their dues are $5 initiation and $1 for monthly fees. A number of their members have just purchased an Ives lantern with gas and oil apparatus, and will give considerable attention to lantern slides, etc.

An invitation is extended to members of other societies to visit the rooms, where a cordial welcome will await all that do.

MAGIC PHOTOGRAPHS.—Print from a negative as usual, either on albumenized or plain paper, but do not tone in gold; fix in hyposulphite of soda, and thoroughly wash; then immerse the prints in a saturated solution of bichloride of mercury till all trace of an image has disappeared. (If the solution be warmed, the action is much more rapid and complete.) Afterwards wash and dry. When it is required to re-develop them, have a piece of blotting paper previously soaked in hyposulphite of soda and dried; moisten it with common water, and while still wet press it down on the invisible image; instantly the picture will reappear with more than its original vigor; if it be again washed the image will be very permanent.—*Photography.*

GENERAL NOTES.

PICTURE PROFITS WILL VANISH.—Photographers in this city are organizing to bring to bear on Congress influence enough to defeat the proposed increase of duty on albumenized paper from fifteen to thirty-five per cent.

A circular accompanied by a petition has been issued by J. M. Appleton, president of the Photographers' Association of America. It is designed to awaken members of the House of Representatives to the enormities of the intended tariff. This petition, after reciting the state of facts, declares:

It would benefit a very large class of persons if the duty were removed altogether, but if this cannot be done we certainly can see no reason for increasing the duty beyond fifteen per cent. If American albumenizers cannot produce a satisfactory article with that amount of protection they cannot do so at thirty-five per cent.

All the persons upon whom I called for information and expressions of opinion on this matter, whether importers of albumenized paper or its consumers, the photographers, agreed in their testimony as to these points.

1. American manufacturers, no matter what protection the tariff may afford them, cannot produce the albumenized paper required in fine photographic work.

2. Importers would be obliged by the proposed increase of the tariff to add $6 a ream to the price of the paper.

3. Photographers, owing to the competition in their business, would be unable to transfer the tax to their customers. They would have to pay $6 a ream more for their material, and furnish photographs at the same prices as before.

In the words of the petition now in active movement among the trade: "This increase will take at least $100,000 from the pockets of photographers throughout the country and increase the surplus in the Treasury by that amount without benefiting any one."

"It is an outrage, this scheme to advance the duty to thirty-five per cent," said Mr. C. D. Fredericks. "If albumenized paper of the requisite quality could be made here there might be some excuse for such a measure. But it can't, and we must use the imported article. Therefore, this addition to the tax is simply a robbery of photographers to the extent of $6 a ream on all the albumenized paper they use."

Mr. Anthony and Mr. Wilcox, of the Broadway importing house, explained that they knew the best quality of albumenized paper could not be made here, because they had tried it, and had had to give it up. A successful manufacturer of it came from Germany, and tried to make it in Hoboken, but, even with the protection of a fifteen per cent. tariff, he cannot compete with the imported article. This firm has lately asked the Committee on Ways and Means to place this article on the free list and at any rate not to advance the duty.

"We are all tariff men here, yet we are down on the tax," exclaimed Mr. W Irving Adams, of the Scovill & Adams Company, after explaining how the waters from melted snows of the Alps gave a finish to the paper made by a particular factory in Rives, France, which enables the Dresden albumenizers to beat the world and the American protective tariff.

"Are you going to beat the proposed advance?"

"We must beat it."—*New York Herald.*

THE number of plates which amateurs absolutely waste is simply enormous. As an instance we may relate the following experience. Our rambles awheel last Friday took us to Stratford-on-Avon, the church at which place is a much-photographed spot. The best view is taken from the fields, and has the churchyard and the river in the foreground, together with an entire and almost uninterrupted view of the whole side of the building. We strolled down through the fields after dinner, and there were three amateur photographers busily engaged in focussing upon the church, quite reckless of the fact that the sun was just over the spire. Consequently they must have had it very nearly in their lenses, and the whole of the details of the church, the churchyard, and nearly everything in the foreground were shrouded in that misty shadow which one meets with on a fine day. The result would necessarily be little more than a silhouette. We remarked to one as we passed that "he had come at the wrong time of day" for the view in question, before ten in the morning being the best time. His reply was characteristic. "Well, I am here now, and must make the best of it." We are afraid his development of that picture will show that the best was after all a bad job. Exposing plates on architectural subjects right against the sun is absolutely useless, and why, "because he was there," a man should simply throw away plates surpasses our comprehension, unless, indeed, he was ignorant of the fact. In this case, however, perhaps it was a case of "Where ignorance is bliss 'tis folly to be wise."—*Photography.*

THAT photography has extended its sphere of usefulness into all the professions and nearly all occupations, is becoming generally known in these days. The camera has been for some time a valued instrument on board the men-of-war of this country and other nations, as well as in the armies of the various governments; but, until a letter, dated March 20th of the current year, reached us from Malta, signed by Alfred Davis, "Sergeant of Photography" of Royal Engineers, we did not know that photography had received official recognition in the manner thus indicated. Sergt. Photographer Davis is evidently an enterprising worker in our art. He seeks for all the information on the subject that he can get, and keeps up with the literature of the science as best he may. "Will you kindly forward me, at your earliest convenience," he writes, "The American Annual of Photography and *Photographic Times* Almanac for 1890?" and adds, "You might put up a catalogue of your publications, if convenient." We shall be glad to hear from Sergeant Photographer Davis again.—*The Photographic Times.*

THE month following the appearance of these notes will probably be the best in the whole year for instantaneous photography. Give your shutters a good overhauling—they will need it—and oil them carefully. Wipe your lenses with a little alcohol, and let your camera be thoroughly light-tight. Then sally forth on a *warm* May day, after a shower, keep the sun well over one shoulder, and you may use an aperature of *f* 16 and an exposure of the hundredth part of a second, and still find your plates "fully exposed." But you must use *fresh* plates; last year's stock won't do for such work. Reserve the old plates for "time exposures."—*Amateur Photographer.*

LITERARY AND BUSINESS NOTES.

THE *Photographische Rundschau* (Vienna) contains articles on "In the Land of the Pharaohs," and "P. Möessard's Cylindrograph," a new form of camera. The current number contains several illustrations, one being a magnificent collotype of a bunch of flowers taken on an orthochromatic plate, and it is difficult to believe that even a direct print from the negative could be better.

The negative is the work of Sir Robert Knight von Stockert, of Vienna. The composition of the flowers shows an artistic conception rarely met with, in fact the selection of the individual flowers and sprays composing the bunch, as well as the arrangement and blending is so delicate and chaste that it is hard to believe that it is not the handiwork of a maiden's nimble fingers.

The lighting of the subject is especially successful. Sir von Steckert informs us that the picture was made with Voigtlander Wide Angle second smallest stop, on a Vogel-Obernette, extra rapid color plate. No color screen was used.

The excellent mechanical execution by J. Baeckman, in Karlsruhe, is above criticism. The special collotype process employed is known as Matt-Lichtdruck.

L'Amateur Photographe (Paris) gives the following reducing-bath for negatives: Place the negatives in water for half an hour, and then in a bath of 100 parts of water, four parts of sulphuric acid, six parts of 30 per cent. solution of bichromate of potassium. The action of the bath is very energetic, and should be carefully watched. The reduction takes place very uniformly, and no discoloration of the negatives takes place. The negatives so reduced can, if desired, be subsequently intensified.

WE have received, with the compliments of the *Photographic Times*, another publication in which photography is practically treated,—"The Lighting in Photographic Studios," by P. C. Duchochois. It treats of the general principles and rules to be observed to achieve professional success. The rules and effects of lighting, the construction of the glass-house, and how to regulate the light, and modify its actinic action, are all subjects which are well handled by the author. Hints as to background, posing, retouching, and the uses of orthochromatic plates in portraiture, all matters of interest to professional photographers, are to be found within the scope of this compact volume.